

NEC SVGA Monitor

Super VGA

User Manual

N E C

The marketing and sales of the equipment was reported to the BZT.
(Federal Approvals Office for Telecommunications)

The right to retest this equipment to verify compliance with the regulation was given to BZT.

ES MUSS SICHERGESTELLT WERDEN, DASS DIR VORGESEHENE
NETZSTECKDOSE NAHE AM GERÄT ANGEBRACHT UND
LEICHT ZUGÄNGLICH IST.

Die ergonomischen Anforderungen an Bildschirmgeräte im Bürobereich nach **ZH1/618** werden in Verbindung mit der

Videokarte: Prisma Graphic Sys. VGA RT800

erfüllt. Aus ergonomischen Gründen wird empfohlen, die Grundfarben Blau und Rot nicht auf dunklem Untergrund zu verwenden (schlechte Lesbarkeit und erhöhte Augenbelastung bei zu geringem Zeichenkontrast wären die Folge). Weiterhin muß sichergestellt werden, daß die minimale Bildwiederholfrequenz von

	76 Hz bei Positivdarstellung
und	64 Hz bei Negativdarstellung

nicht unterschritten wird (störendes Bildschirmflimmern könnte die Folge sein).

Customer's Record

The serial number of this product appears on the back of the unit. You should note this serial number in the space provided below and retain this manual as a permanent record of your purchase to aid in identification in the event of theft or loss.

Model number: JC-1431VMB
Serial number: _____

WARNING: To reduce the risk of fire or electric shock, do not expose this Computer Display to rain or moisture.

Caution

For 120V Operation, use only with power cord plug having a parallel blade, grounding type plug, rated 125V 10A.
For 240V Operation, use only with power cord having a tandem blade, grounding type plug, rated 250V 5A.

Bescheinigung des Herstellers/Importeurs

Hiermit wird bescheinigt, daß der/die/das

Monitor JC-1431VMB

(Gerät, Typ, Bezeichnung)

In Übereinstimmung mit den Bestimmungen der

BMPT Vfg. 243/1991

(Amtsblattverfugung)

funk-entstört ist.

Dem Bundesamt für Zulassungen in der Telekommunikation wurde das Inverkehrbringen dieses Gerätes angezeigt und die Berechtigung zur Überprüfung der Serie auf Einhaltung der Bestimmungen eingeräumt.

Declaration of the Manufacturer or Importer

We hereby certify that the Monitor JC-1431VMB
Equipment, Type, Model-No.

is in compliance with the requirement of BMPT Vfg. 24311991,

RFI Suppressed.

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1

NEC SVGA Monitor

Congratulations on your purchase of the NEC SVGA color monitor. NEC's SVGA Monitor offers a maximum horizontal resolution of 1024 Pixels by a maximum vertical resolution of 768 Pixels.

Additionally, the SVGA Monitor provides System compatibility via the following features:

- provides automatic adjustment to vertical and horizontal frequencies including VGA, SVGA, EVGA, and VESA VGA.
- displays an infinite number of colors (limited by hardware and Software applications).
- horizontal and vertical size and Position controls.

To properly set up and use your monitor, read the sections that follow.

2

Setting Up

The SVGA Monitor shipping carton contains the monitor, user manual and power cable. If these items are missing, contact your NEC dealer.

Please save the original box and packing materials for future transportation or shipment of this monitor.

ENVIRONMENT Use the following guidelines to set up your monitor:

- Place the monitor in a dry, clean, dust-free location.
- Allow adequate Ventilation around the monitor so that heat generated can dissipate properly.
- Place the monitor away from high-capacity transformers, electric motors, and other strong magnetic fields.
- To minimize eye fatigue:
 - do not place the monitor against a bright background or where sunlight will shine directly on it.
 - position the monitor just below eye level.

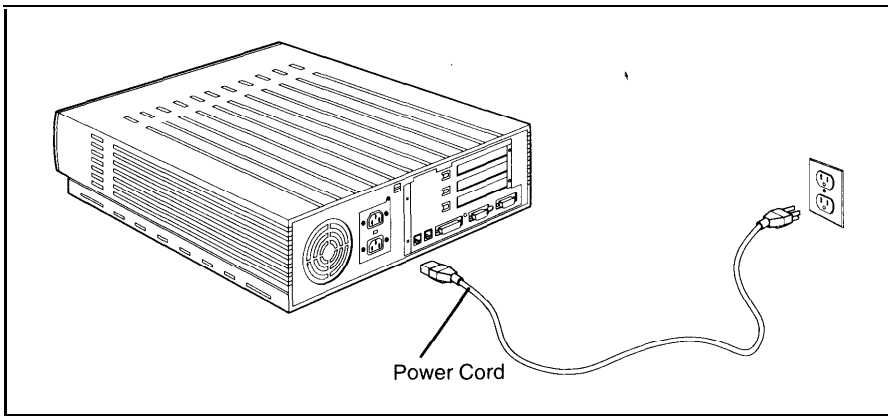
2-2 Setting Up

CONNECTING THE MONITOR

Use the following steps to connect the monitor to **pur** Computer.

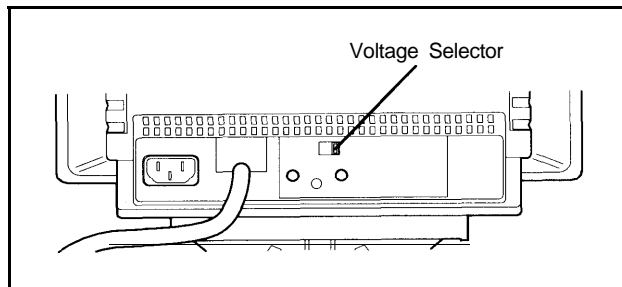
1. Turn off and unplug the computer's power Cord.

Unplugging the Computer



2. The voltage selector is located on the rear of the monitor. Determine the appropriate voltage, 115V or 230V, and set the switch accordingly.

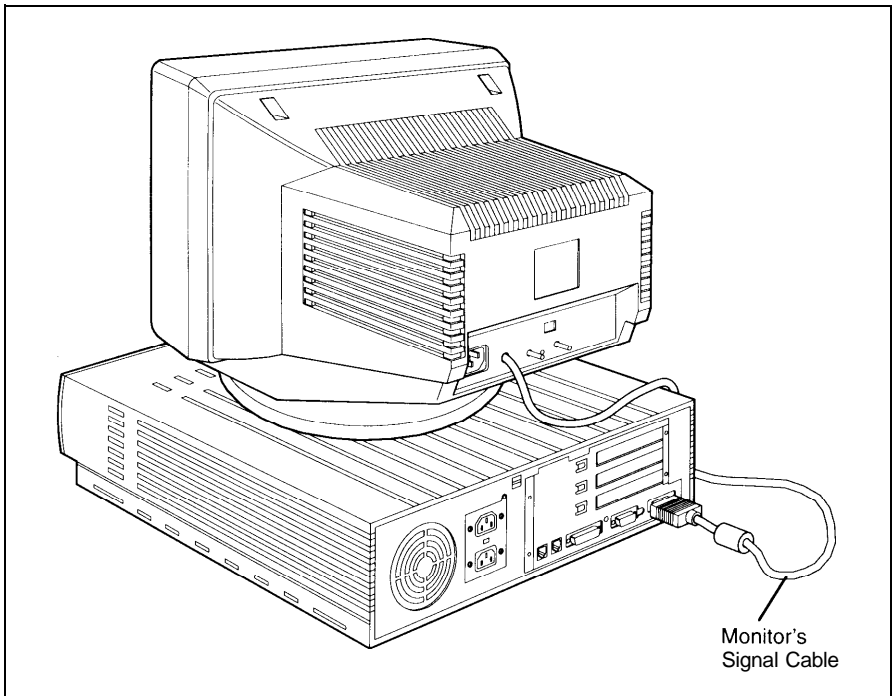
Setting the voltage



3. Attach the monitor signal cable to the video connector at the rear of the Computer.

Secure the connection by tightening the two screws on either side of the signal cable's connector.

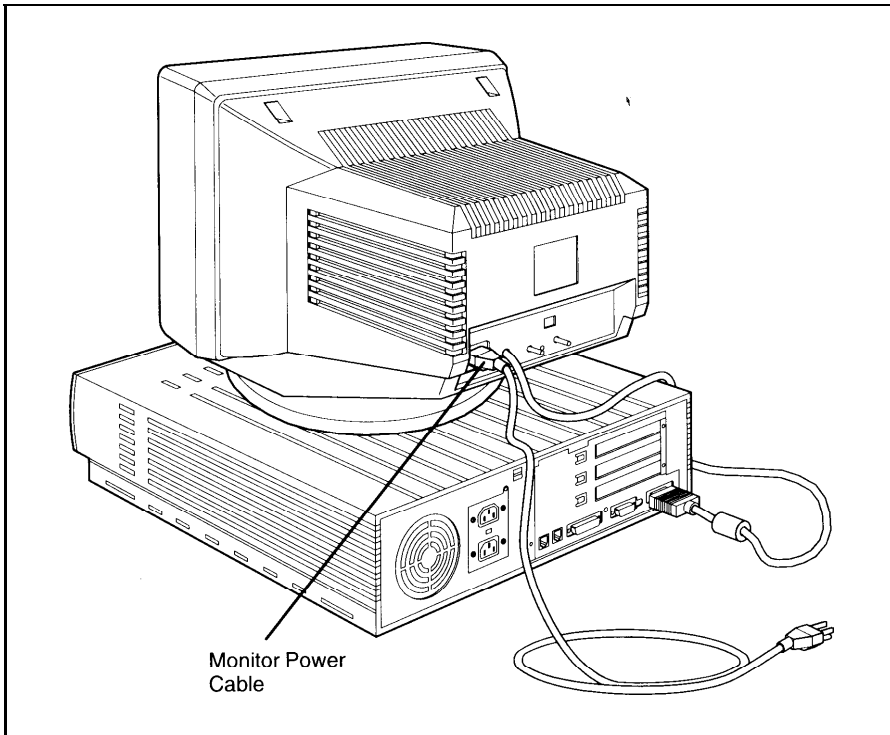
*Attaching the
signal cable*



2-4 Setting Up

4. Connect one end of the monitor power cable to the rear of the monitor. Plug the other end into a *properly grounded* wall outlet.

Connecting the power cable



WARNING: Do not place the monitor or any other object on the power cable. Damage to a power cable can cause fire or electrical shock.

5. If you are setting up the Computer for the first time, see your user manual. Otherwise, continue with the following step.
6. Plug in the Computer power cable.

If you have any Problems, please refer to the Troubleshooting section of this manual.

3

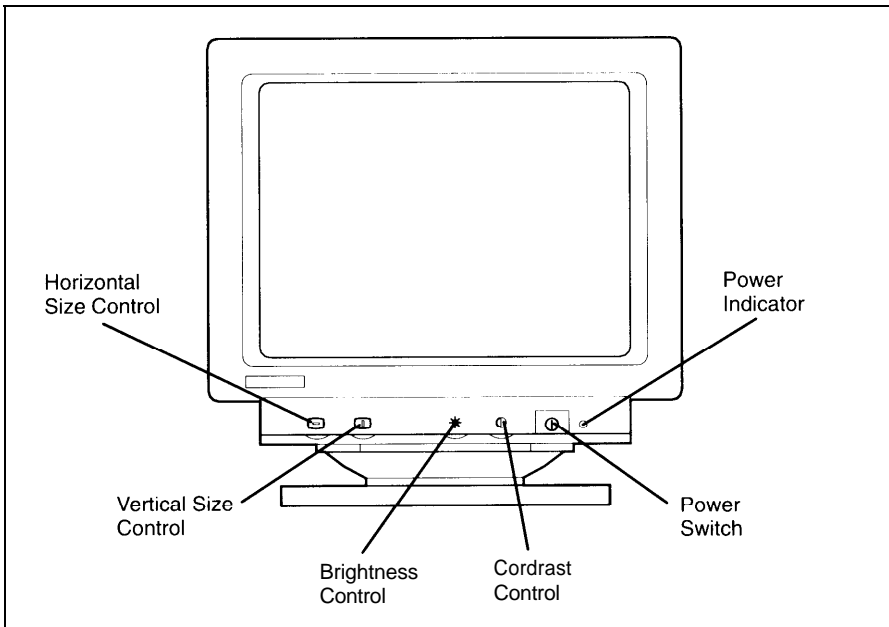
Using the Monitor

This section defines monitor controls and explains how to use them to your advantage.

You may adjust the viewing area of the screen and modify specific screen qualities including brightness and contrast. Further, the tilt/swivel feature allows proper positioning of the monitor.

The figure below shows the front panel features.

Locating controls



FRONT PANEL CONTROLS

Read the descriptions that follow to learn how to operate the front panel controls.

Power Switch

Press this switch to control power to the monitor-. The power indicator lights when the monitor power is on.

Horizontal Size Control

This control sets the monitor's screen to the desired horizontal width. Move the control counterclockwise to decrease the horizontal width, and clockwise to increase the horizontal width. The size of the image depends on the signal applied to the monitor.

Vertical Size Control

This control sets the monitor's screen to the desired vertical height. To decrease the vertical length of the Screen, move the control counterclockwise, to increase it move the control clockwise. The size of the image depends on the signal applied to the monitor.

Brightness Control

Selects the degree of brightness. Move the control counterclockwise to dim the screen and clockwise to make the screen brighter. A brighter screen will limit the on-screen glare and also affect the image quality.

Contrast Control

Use the contrast control to select how dark or light you would like the monitor's foreground. Move the control counterclockwise to make the screen darker, clockwise to make the screen lighter. The position of the contrast control does affect the image quality.

REAR PANEL CONTROLS

Read the description that follows for an understanding of how each control operates. The figure below locates the rear panel controls.

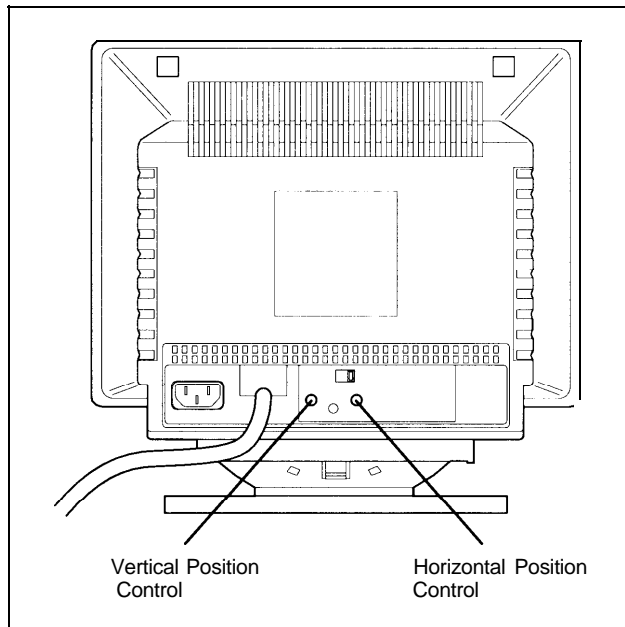
Horizontal Position Control

Turn the Horizontal Position Control to adjust the image's horizontal Position.

Vertical Position Control

Turn the Vertical Position Control to adjust the image's vertical Position.

Locating controls



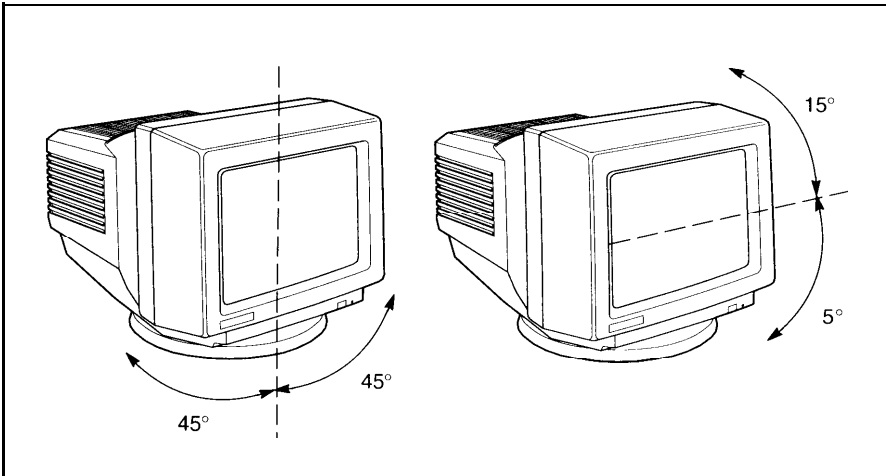
3-4 Using the Monitor

TILT/SWIVEL BASE

The tilt/swivel base allows you to tilt the screen up or down, and move it from side to side, 45 degrees to the right or left.

You can reposition the monitor up to an angle of -5 degrees forward and +15 degrees backwards.

Positioning the monitor



PROBLEM SOLVING

If you encounter a problem with the SVGA Monitor, the problem may be a simple one that you can solve yourself. Check the items on the following list when you encounter a problem:

- The power switch for the monitor is on.
- The signal cable and power cord are securely connected.
- The monitor is connected to a working electrical outlet. Test the outlet by plugging in a lamp or other electrical device.
- Check that the signal timing and pin assignments meet the SVGA Monitor's specifications (see "Pin Assignments" and "Signal Timing" in Section 4).
- Use the table on the following page to troubleshoot your monitor.

TROUBLE-SHOOTING

Use the troubleshooting table below to isolate any problems and respond with the appropriate corrective action.

If you still cannot determine the problem, contact your NEC dealer.

Troubleshooting

PROBLEM	CORRECTIVE ACTION
No picture appears on the monitor Screen.	Turn off the power switch. Wait at least 30 seconds and then turn it on again.
The monitor is dark, but the power indicator is lit.	Adjust the Brightness and Contrast controls.
Image area is not centered.	Adjust the Vertical Position control or Horizontal Position control.

CLEANING

Clean the outside of the monitor as needed. Use the following precautions as guidelines:

- Unplug the monitor's power cord from the outlet before cleaning.
- Use only a damp cloth and mild detergent.
- Do not attempt to open the unit.

4

Reviewing Technical Data

The following tables provide specifications, pin assignments and signal timing:

SVGA Monitor Specifications

ITEM	DESCRIPTION
Physical Dimensions	
Height	14.4 inches (365 mm)
Width	14.5 inches (367 mm)
Depth	15.4 inches (390 mm)
Weight	25.3 lbs. (11.5 kg)
Operating Environment	
Temperature	-32°F to 95°F (0°C to 35°C)
Humidity	10% to 80% (non-condensing)
Storage Temperatures	-4°F to 140°F (-20°C to 60°C)
Storage Humidity	5% to 95%
Power	
Power Source	A C 100-125V/200-240V, 50Hz/60Hz
Power Consumption	85 W Maximum
Picture Tube	14 inches, 90° deflection, 0.28 mm dot pitch
Resolution	
Horizontal	1024 pixels (non-interlaced/interlaced)
Vertical	768 pixels (non-interlaced/interlaced)

4-2 Reviewing Technical Data

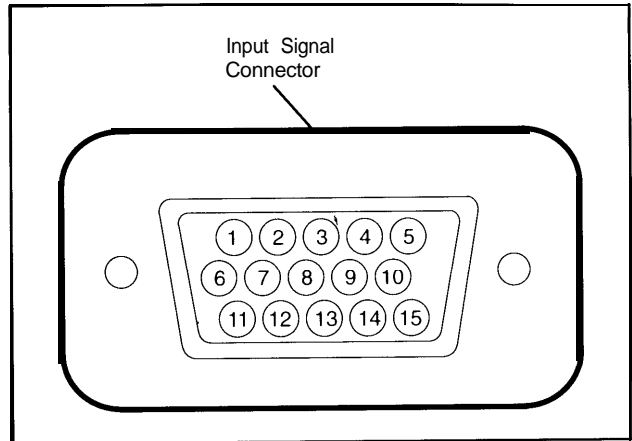
SVGA Monitor Specifications (cont'd)

ITEM	DESCRIPTION
Synchronization	
Horizontal	31.5 kHz/35.2 kHz/35.5 kHz/37.9 kHz/48 kHz
Vertical	50 Hz to 90 Hz continuous
Active Display Area	
Horizontal	9.6 inches (246 mm) depends on signal timing used
Vertical	7.2 inches (185 mm) depends on signal timing used
Input Signals	
Video	Analog 0.7 Vp-p/75 ohm positive
Separate Sync.	TTL level: Horizontal, Positive/Negative, Vertical, Positive/Negative
Display Colors	
Analog Input	Infinite colors (may be limited by hardware or Software)

**PIN
ASSIGNMENTS**

The SVGA monitor uses a 15-pin, mini high-density D-SUB male connector for the input Signal. The figure below shows the connector pin locations. See the table that follows for connector pin assignments.

*Connector pin
locations*

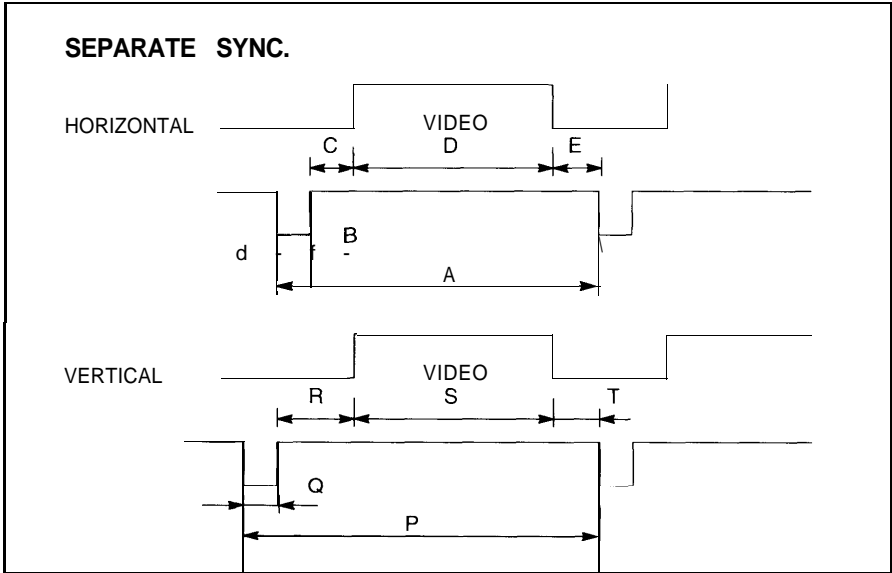


Pin Assignments

PIN NUMBER	SIGNAL
1	Red
2	Green
3	Blue
4	Ground
5	Ground
6	R-Ground
	G-Ground
8	B-Ground
9	No Connection
10	Ground
11	Ground
12	No Connection
13	Horizontal Sync.
14	Vertical Sync.
15	No Connection

**TIMING
TABLES**

The following diagram and tables show the preset timing used in the monitor's VGA, SVGA, EVGA and VESA VGA modes.



Preset Timing — VGA

ITEM	640 x 350	720 x 400	640 x 480
fH (kHz)	3 1.469	3 1.469	3 1.469
A μ s (Line time total)	3 1.778	3 1.778	3 1.778
B μ s (Sync. pulse width)	3.813	3.813	3.813
C μ s (Back porch)	1.589	1.589	1.589
D ps (Active)	26.058	26.05 8	26.058
E ps (Front Porch)	0.318	0.318	0.3 18
fV (Hz)	70.080	70.080	59.940
P ms (Frame time total)	14.268	14.268	16.683
Q ms (Sync. pulse width)	0.064	0.064	0.064
R ms (Back porch)	1.716	0.890	0.793
S ms (Active)	11.504	13.156	15.762
T ms (Front porch)	0.985	0.159	0.064
	Separate Sync.	Separate Sync.	Separate Sync.
Horizontal Sync. Polarity	Positive	Negative	Negative
Vertical Sync. Polarity	Negative	Positive	Negative
Interlaced	No	No	No

4-6 Reviewing Technical Data

Preset Timing — SVGA/EVGA

ITEM	800 x 600	1024x768
fH (kHz)	35.156	35.587
A μ s (Line time total)	28.44	28.100
B μ s (Sync. pulse width)	2.000	3.910
C μ s (Back porch)	3.556	1.247
D μ s (Active)	22.222	22.760
E μ s (Front Porch)	0.667	0.178
fV (Hz)	56.250	86.960
P ms (Frame time total)	17.778	11.499
Q ms (Sync. pulse width)	0.057	0.112
R ms (Back porch)	0.626	0.563
S ms (Active)	17.067	10.824
T ms (Front porch)	0.028	0.0100
	Separate Sync	Separate Sync.
Horizontal Sync. Polarity	Negative	Positive
Vertical Sync. Polarity	Negative	Positive
Interlaced	No	Yes

Preset Timing — VESA Timings

ITEM	640 x 480	800 x 600	1024x768
fH (kHz)	37.860	48.090	48.363
A μ s (Line time total)	26.4 13	20.794	20.677
B μ s (Sync. pulse width)	1.270	2.399	2.092
C μ s (Back porch)	4.603	1.279	2.462
D μ s (Active)	20.3 17	15.995	15.754
E μ s (Front Porch)	0.762	1.119	0.369
fV (Hz)	72.809	72.010	60.000
P ms (Frame time total)	13.735	13.887	16.667
Q ms (Sync. pulse width)	0.079	0.124	0.124
R ms (Back porch)	0.740	0.479	0.600
S ms (Active)	12.678	12.510	15.880
T ms (Front porch)	0.238	0.772	0.062
	Separate Sync.	Separate Sync.	Separate Sync.
Horizontal Sync. Polarity	Negative	Positive	Positive
Vertical Sync. Polarity	Negative	Positive	Positive
Interlaced	No	No	No